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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,083	09/08/2004	Robert Kline	5552550124009	8902
24325 7590 08/29/2007 PATENT GROUP 2N JONES DAY NORTH POINT 901 LAKESIDE AVENUE CLEVELAND, OH 44114			EXAMINER NOONAN, WILLOW W	
			ART UNIT 2146	PAPER NUMBER
			MAIL DATE 08/29/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/507,083	<b>Applicant(s)</b> KLINE ET AL.	
	<b>Examiner</b> Willow Noonan	<b>Art Unit</b> 2146	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/8/2004, 2/7/2005</u> | 6) <input type="checkbox"/> Other: ____  |

### **DETAILED ACTION**

1. The instant application having Application No. 10/507,083 has a total of 20 claims pending in the application; there are 2 independent claims and 18 dependent claims, all of which are ready for examination by the examiner.

#### ***Oath/Declaration***

2. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in 37 C.F.R. 1.63.

#### ***Priority***

3. As required by M.P.E.P. 201.14(c), acknowledgement is made of applicant's claim for priority based on applications filed on March 11, 2002 (U.S Provisional Patent App. No. 60/362,930).

#### ***Drawings***

4. The applicant's drawings submitted are acceptable for examination purposes.

#### ***Information Disclosure Statement***

5. As required by M.P.E.P. 609(C), the applicant's submissions of the Information Disclosure Statements dated September 8, 2004 and February 7, 2005 are acknowledged by the examiner and the cited references have been considered in the

examination of the claims now pending. As required by M.P.E.P 609 C(2), a copy of the PTOL-1449 initialed and dated by the examiner is attached to the instant office action.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 3 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 3, applicant discloses that the state prediction module is “operable to ... update the prediction data . . . .” However, it is unclear what is meant by the word “update;” more specifically, it is unclear what data is being updated, what the nature of the update is, and how the data is being updated.

Additionally, the terms “prediction notification” and “reception” thereof are unclear. Specifically, it is unclear what information the notification contains, what format the notification is in, and how the notification is received from the mobile device. It is further unclear how the “prediction data” are “update[d]” “based on” the received notification.

Regarding claim 17, the term “increment to the set of states” is ambiguous and unclear. It is not clear what operations are encompassed by this phrase or how an operation of this kind takes place.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasriel (U.S. Patent No. 6,721,780) in view of Desai (U.S. Patent No. 6,871,218) and Codella (U.S. Patent No. 7,003,566).

Regarding claims 1 and 11, Kasriel teaches a system for handling data requests from mobile devices, the system comprising a memory operable to store data requests received from at least one device. See Kasriel at col. 4, lines 36-38 ("The pre-download statistics server includes ... a data memory"). Kasriel teaches that the system comprises a state prediction module operable to access the memory and predict, a first forecasted data request for a device based on the stored data requests. See Kasriel at col. 2, lines 1-5 ("The web server maintains statistical information responsive to requests for information made by users, to estimate which links between web pages are most likely to be followed."). Kasriel also teaches that the system comprises a push module operable to receive the first forecasted data request from the state prediction module and in response request and receive first response data related to the first forecasted data request and prepare the first response data for transmission to the

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device over the network. See Kasriel at col. 1, lines 61-65 ("A web server maintains information regarding which web pages are most likely to be requested by users, and pre-downloads those web pages to associated web clients in advance of actual requests being made by the user.").

However, Kasriel does not teach that the device is a mobile device on a wireless communication network. Desai does teach that the device may be a mobile communication device. See Desai at col. 4, lines 40-50. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a mobile device in Kasriel's system because Desai discloses a similar method for predictive and preemptive page caching for improved site navigation.

Regarding claim 2, Kasriel teaches that the first forecasted data request is predicted in response to receiving a data request from the mobile device. See Kasriel at col. 2, lines 1-10 ("The web server maintains statistical information responsive to requests for information made by users, to estimate which links between web pages are most likely to be followed.")

Regarding claims 3 and 12, Kasriel teaches that the state prediction module is further operable to generate prediction data based on the stored data requests (see Kasriel at col. 2, lines 1-5, "The web server maintains statistical information responsive to requests for information made by users, to estimate which links between web pages are most likely to be followed."), and to update the prediction data based on the reception of a prediction notification received from the mobile device in response to the first response data (see Kasriel at col. 4, lines 55-57, "The prediction engine intercepts

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and processes a sequence of messages including requests from the Web client that are directed to the web server.”; Kasriel at col. 8, lines 7-13, “the pre-download device determines a set of statistics associated with actual requests from one of more users at Web clients, and outputs that set of statistics to the pre-download statistics server. As part of this step, the pre-download statistics server maintains those statistics associated with actual requests”).

Regarding claim 4, Kasriel teaches that the state prediction module is further operable to predict the first forecasted data request independent of a data request received from the mobile device. See Kasriel at col. 2, lines 8-11 (“These rules can be responsive to ... information about categories of users, ... demographic information, ... or other relevant factors.”).

Regarding claim 5, Kasriel teaches that the state prediction module is further operable to receive a data request from the mobile device and in response access the memory and predict a second forecasted data request based on the received data request and the stored data requests. See Kasriel at col. 2, lines 1-10 (“The web server maintains statistical information responsive to requests for information made by users, to estimate which links between web pages are most likely to be followed.”). Kasriel also teaches that the push module is further operable to receive the received data request and the second forecasted data request from the state prediction module and in response request and receive second response data related to the received data request and the second forecasted data request and prepare the second response data for transmission to the mobile device over a network. See Kasriel at col. 7, lines 65-67

("the pre-download device determines whether or not to respond to the Web client with a hint ... the Web client receives the hint from the pre-download device (along with the network object it requested from the Web server)"). Desai teaches that the device may be a mobile communication device on a wireless network. See Desai at col. 4, lines 40-50.

Regarding claim 6, Kasriel teaches state prediction module is further operable to predict the first forecasted data request on a periodic basis. See Kasriel at col. 5, lines 33-34 ("there are likely to be periodic changes to the Web-site model graph").

Regarding claim 7, Kasriel teaches that the state prediction module is further operable to select prediction modes according to the Identified subset of stored data. See Kasriel at col. 2, lines 5-11 ("These rules can be responsive to statistical measures, to information about categories of users, to demographic information, to past behavior of specific users at the web site, or to other relevant factors.").

Regarding claim 8, Kasriel teaches that the prediction modes may comprise: an atomic mode that operates on stored data requests specific to the identity of user (see Kasriel at col. 2, lines 8-11, "responsive to ... specific users"); and a group mode that operates on stored data requests specific to a plurality of users (see Kasriel at col. 2, lines 8-11, "responsive to ... categories of users"). Desai teaches that these users may be mobile communication devices. See Desai at col. 4, lines 40-50.

Regarding claim 9, Kasriel teaches that the state prediction module comprises a Markov chain module operable to predict the first and second forecasted data requests.



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See Kasriel at col. 5, lines 15-22 ("initial node, a final node, a transition from the initial node [sic] to the final node, and a measure of a weighted probability of transition").

Regarding claim 10, Kasriel teaches that the second forecasted data request comprises a set of consecutive data requests and consecutive response data referenced from the received data request. See Kasriel at col. 5, lines 60-63 ("instructs the Web client to request one *or more* [emphasis added] target network objects").

Regarding claim 13, Kasriel teaches the steps of assigning a probability value to the forecasted data requests. See Kasriel at col. 5, lines 15-22 ("initial node, a final node, a transition from the initial node [sic] to the final node, and a measure of a weighted probability of transition"). Kasriel also teaches that the prediction modes may be based on stored data requests specific to the identity of user (see Kasriel at col. 2, lines 8-11, "responsive to ... specific users") or on stored data requests specific to other users (see Kasriel at col. 2, lines 8-11, "responsive to ... categories of users"). Although Kasriel does not teach a threshold probability for deciding which prediction mode to use, Desai does teach that threshold values may be used effectively for determining preemptive downloading characteristics. See Desai at p. 5, paragraph 33.

Regarding claim 14, Desai teaches that the step of comparing a received data request from a mobile device to prediction data to predict forecasted data request based on the comparison may comprise the step of selecting a set of states having a transition probability from a current device state greater than a selection probability threshold. See *id.* Desai also teaches incrementing the set of states until the set of states transition probability from the current mobile device state is less than the selection

probability threshold. See Desai at p. 5, paragraph 33 (“the size of the dark circles is proportional to the magnitudes of the value of the assigned weighting coefficient ... however, ... it may be desirable to limit the number of pages to be preemptively downloaded ... [by a probability] threshold”).

Regarding claim 15, Desai does not teach determining the cardinality of the set of states and limiting it to a pre-defined depth. However, Codella does teach limiting the predicted state to a maximum depth. See Codella at p. 15, lines 38-47 (“the ‘depth’ of the prediction can be configurable”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use this feature with Kasriel’s and Desai’s systems because Codella teaches a similar system for predictive data caching. See Codella, *Abstract*.

Regarding claims 16 and 17, Codella teaches limiting the maximum depth and Desai (as discussed above) teaches selecting states with the maximum transition probability. See Codella; Desai.

Regarding claim 18, Kasriel teaches that the state prediction module is further operable to predict the first forecasted data request independent of a data request received from the mobile device. See Kasriel at col. 2, lines 8-11 (“These rules can be responsive to ... information about categories of users, ... demographic information, ... or other relevant factors.”).

Regarding claim 19, Kasriel teaches the step of receiving a successful prediction notification from the mobile device and updating the prediction data based, on the successful Prediction notification. See Kasriel at col. 5, lines 34-37 (“These changes

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can include new nodes, new transitions, and new weighted probabilities assigned to transitions in response to selections made by the user at the Web client.”).

Regarding claim 20, Kasriel teaches that the step of predicting an independent forecasted data request is performed on a periodic basis. See Kasriel at col. 5, lines 33-34 (“there are likely to be periodic changes to the Web-site model graph”).

### ***Conclusion***

10. Please see the included *Notice of References Cited* for additional prior art considered pertinent to applicant’s disclosure but not explicitly relied upon in this action.

11. The examiner requests, in response to this Office action, support be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

12. When responding to this office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections See 37 CFR 1.111(c).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Willow Noonan whose telephone number is (571) 270-1322. The examiner can normally be reached on Monday through Friday, 7:30 AM-5:00 PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JEFFREY PWU  
SUPERVISORY PATENT EXAMINER